VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq (effective 1/6/2011). The site is an inactive heavy mineral sand mine, undergoing reclamation. Outfall 001 is eliminated in the 2012 permit due to the reclamation of the former process wastewater ponds and elimination of the discharge. No process wastewaters are generated on site. The storm water discharge results from overflow from the storm water pond to Outfall 002 during storm events. This permit action consists of updating Part I limitations, monitoring requirements and special conditions. SIC Code: 1099 (Misc. Metal Ores, Not Elsewhere Classified)

1.	Facility Name:	Hickory Mine Concentrator
	Mailing Address:	12472 St. John Church Road Stony Creek, VA 23882
	Location:	19540 Bolsters Road Stony Creek, VA 23882 Dinwiddie County
2.	Permit Number	VA0092126
	Existing Permit Expiration Date:	November 12, 2012
3.	Owner Name:	Iluka Resources, Inc.
	Owner Contact Name:	Kevin Rideout
	Title:	Environmental Health and Safety Specialist
	Telephone No:	(434) 348-4316
4.	Application Complete Date:	December 15, 2011
	Permit Drafted By:	Janine Howard, Piedmont Regional Office
	Date:	March 1, 2012
	Reviewed By:	Tammy Cohen Date: 3/19/12 Curt Linderman Date: 5/22/12, 7/13/12 Kyle Winter Date: 7/17/12
	Public Comment Period:	August 8, 2012 – September 7, 2012
5.	Receiving Stream Name:	Harris Swamp, Unnamed Tributary
	River Mile:	5-AXHI000.31 (Outfall 002)
	Basin:	Chowan and Dismal Swamp
	Subbasin:	Chowan
	Section:	2b
	Class:	VII
	Special Standards:	None
	7-Day, 10-Year Low Flows:	0.0 MGD
	1-Day, 10-Year Low Flows:	0.0 MGD
	30-Day, 5-Year Low Flows:	0.0 MGD
	30-Day, 10-Year low Flows:	0.0 MGD
	Harmonic Mean Flow:	0.0 MGD
	Tidal:	NO
	On 303(d) list:	NO

Attachment A – Flow Frequency Memorandum

6. Operator License Requirements: Not Applicable

7. Reliability Class: Not Applicable

8. Permit Characterization:

(X) Private ( ) Federal ( ) State ( ) POTW

( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9. **Table 1.** Discharge Description

Outfall Number	Discharge Source	Treatment	Max Flow (MG)	Daily Flow
002	Storm water drainage from the site to storm water settling pond BMP	Settling	0.031*	Rainfall dependent

*The maximum flow was obtained from application EPA Form 2F sampled event. Form 2F was deemed to be the most appropriate source of flow data for the reclaimed site. DMR data reflects flow from Outfall 002 prior to the reclamation of the site. The reclamation process has altered the topography of the site, which may have a significant impact on site drainage. The Form 2F data reflects a storm water discharge that took place in October 2011 once the land reclamation process had begun, and is therefore more characteristic of the anticipated 2012 permitted discharge than historical DMR data.

Iluka Resources Inc. mines heavy mineral sands for ilmenite, zircon, and staurolite in southeastern Virginia. The Hickory Mine Concentrator site was Iluka's first mineral mining site in Virginia. Formerly permitted under a Virginia Pollution Abatement (VPA) permit (VPA00563), this site was converted to a VPDES permit in 2007. The site had been operational under the VPA permit for over a decade and in 2007 a VPDES permit was deemed more appropriate to allow the facility to discharge their process wastewaters to state waters.

While Iluka was actively mining the site, water was utilized to move and separate mineral sands from clay and gangue minerals in the ore body. Coarse waste material was removed from the process water using screens and a gravity separation drum. The process water then entered a thickener, where suspended clays settled out. The settled clays were pumped to tailings ponds for disposal and post-mining land reclamation. The water then flowed from the thickener to the operational units associated with the permit. A clarifying pond and process wastewater pond were operated in series and used to settle fine solids from the process wastewater prior to discharge via Outfall 001. While the plant was operational, much of the process water was recycled and reused, so discharges via Outfall 001 were infrequent and usually occurred only after a significant rainfall event. DMR data from January 2008 through January 2012 reflects only seven discharges during this time period.

Contaminated storm water runoff that had comingled with stockpiled minerals at the active mine site flowed to a settling basin prior to discharging via Outfall 002. Although the discharge was composed of storm water, it was classified as a process wastewater discharge due to the contact with the mineral stockpiles. Storm water from mineral mining operations is identified in the General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity (9VAC25-151) specifically as that which does not come in contact with mineral piles. Therefore, DEQ determined that storm water which comes in contact with mineral piles is process wastewater.

In 2009 the Hickory Mine Concentrator was decommissioned. All of the mining equipment was removed from the site and all remaining process wastewaters were discharged via Outfall 001. Following discharge of the final process wastewaters, the process wastewater pond and clarifying pond were back filled in accordance with the conditionally approved closure plan (approved 12/19/2008, see Attachment H). At the time of the 2012 permit reissuance application Iluka was in the process of adding top soil and seeding across the site and the site was being reclaimed to ensure arable land is returned to the owner. Outfall 001 is no longer in existence due to the removal of the clarifying and process pond treatment units.

Sector G (Metal mining classified under SIC Major Group 10) of 9VAC25-151- General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity (VAR05) defines the "reclamation phase" of a metal mining site as "activities intended to return the land to its premining use". Per 9VAC25-151-150 A.4., discharges covered by Sector G include "storm water discharges from facilities at mining sites undergoing reclamation." Reclamation of the Hickory mine site continues to date and storm water drains to

the small settling pond, which overflows via Outfall 002. As such, the activity occurring at the Hickory Mine site is subject to industrial storm water permitting under Sector G due to the continued land reclamation work and the 2012 permit proposes to classify Outfall 002 as a storm water only discharge; comingled storm water discharges (classified as process wastewaters) have ceased due to the removal of all material piles from the site.

Rational for individual permit:
Due to remnant groundwater contamination issues associated with the treatment units utilized during active mining, it is necessary to maintain this individual permit (as opposed to requiring registration for a VAR05 general permit) until such time as DEQ determines that groundwater contamination is no longer present and the site is in conformance with 9VAC 25-280-30 Antidegradation Policy for groundwater.

In summary, the 2007 permit required the submittal of a corrective action plan to address groundwater contamination (low pH) at downgradient wells. On September 22, 2008 DEQ approved a corrective action plan for the site that relied on continued monitoring of the groundwater until such time as the data indicate that groundwater contamination has attenuated. The treatment units (clarifying and process pond) were thought to be the source of contamination, a supposition that Iluka refuted during a meeting with DEQ in February of 2009 (refer to 2/29/2009 meeting memo included in Attachment G for details). To lend credence to Iluka's argument, DEQ suggested that a liner permeability test be performed on both units. In a January 2011 meeting the results were verbally reported to DEQ; according to Iluka, the permeability test on the clarifying pond failed, while the test on the process water pond passed. In light of the permeability test results, DEQ maintained that the leaking clarifying pond is a likely source of groundwater contamination. DEQ stated that groundwater monitoring must continue until such time as DEQ evaluation of the data shows that the groundwater is no longer impacted by the former mining activities on site and the site is in conformance with 9VAC25-280-10 et seq Groundwater Standards. Once satisfied that these requirements are met, DEQ may authorize termination of groundwater monitoring (refer to the 1/21/2011 meeting memo included in Attachment G for details).

In October of 2011 DEQ approved the relocation of the upgradient monitoring well to a location that has not been impacted by mining activity. The well relocation was necessary to facilitate continued groundwater monitoring and comparison of downgradient pollutant levels to a representative background well. The new well, HMW-A2, is located in the northwest edge of the property, upgradient of areas where mining occurred. With the approval of the well relocation, quarterly monitoring of pH, conductivity, sodium, total dissolved solids, TSS, and temperature is required. Iluka is reclaiming the site under a conditionally approved closure plan that precludes termination of groundwater monitoring without DEQ approval. Following complete site reclamation and elimination of all point source discharges of storm water, Iluka may request permit termination, contingent upon a DEQ evaluation of the groundwater data. This permit shall remain active and groundwater monitoring shall continue following complete site reclamation until such time as DEQ determines that the groundwater at downgradient monitoring wells is no longer contaminated and the site is in conformance with 9VAC25-280-10 et seq Groundwater Standards. Refer to Attachment G for a detailed account of the groundwater status and history on site.

This facility is not required to register for VAR05 as all storm water on site is managed by the individual permit Part I.A.1. If site reclamation is completed and all point source discharges of storm water are eliminated from the site prior to satisfactory groundwater quality being achieved, Iluka may report no discharge on their e-DMR (to avoid a major permit modification), while continuing the permit required groundwater monitoring until such time as DEQ determines that groundwater monitoring and the permit may be terminated.

Attachment B – Site Diagram
Note: The aerial image used for the site diagram reflects the most up to date aerial imagery available. The outline of the former clarifying pond and process wastewater pond are visible on the image. However, at the time of permit application (December 2011) the ponds had been reclaimed. Additionally, the thickener structures that are visible on the aerial image have been removed from the site.

10. Sediment Use or Disposal: Not applicable. All settling basins have been reclaimed.

11. Discharge(s) Location Description: The discharge is located in Dinwiddie County, Virginia.

Attachment C – Cherry Hill Quadrangle (040D) topographic map

12. Material Storage: Not applicable. The site is no longer an active mine and all equipment and materials have been removed from the site.

13. Ambient Water Quality Information:
The Iluka Resources Hickory Mine Concentrator facility discharges to an unnamed tributary of Harris Swamp near Bolsters Store, VA. The outfall (002) is located at rivermile 5AXHI000.31. At the discharge point, the receiving stream is a dry ditch which becomes an intermittent stream.

The receiving stream at the point of discharge has a 1Q10, 7Q10, and 30Q10 of 0 MGD, thus theoretical low flows are comprised totally of effluent. Under these low flow conditions, ambient data are not applicable for worst-case modeling; instead, effluent data from the permit application and Discharge Monitoring Reports (DMRs) were used to determine the need for permit limitations.

14. Antidegradation Review & Comments:

Tier: 1 __X__ 2_____ 3_____
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Due to its ephemeral nature, the tributary is considered a Tier 1 water.

15. Site Inspection Performed by: Janine Howard. See **Attachment D**: Site Inspection Report
Date: March 13, 2012

16. Effluent Screening & Limitation Development:

Storm water Evaluation- Outfall 002

Application data including Attachment A (Water Quality Criteria monitoring) and EPA Form 2F provided the data used for the storm water evaluation. Pollutants reported in measureable concentrations are compared against screening values, used to identify pollutants of higher priority during development and assessment of the Storm Water Pollution Prevention Plan (SWPPP). Some parameters were reported as less than the lab quantification level (QL), but were included in the evaluation due to the lab QL being less stringent than the agency accepted QL. Parameters reported as less than the agency established QL were considered absent for the purpose of this evaluation.

Pollutants that are identified as being above the screening value are required to undergo a storm water management evaluation, to be monitored more frequently (quarterly as opposed to annually) and potentially trigger a requirement for annual Whole Effluent Toxicity Testing. The screening value is determined based on two times the acute water quality standard for that parameter. The maximum reported storm water value (drawn from Form 2F and Attachment A data) is utilized for the storm water evaluation. The data and screening criteria (if applicable) are shown in Table 2.

Analytical benchmark monitoring is a component of storm water permitting for certain categories of industrial facilities which, due to the nature of their operations and industrial activity, have the potential to contribute pollutants to their storm water discharges. Benchmark monitoring is primarily utilized to assess the effectiveness of the Storm Water Pollution Prevention Plan (SWPPP) in mitigating the

discharge of pollutants to receiving waters. An exceedance of a benchmark value (defined based on the industrial sector in GM10-2003 VPDES Permit Manual, as revised 8/25/11) does not represent a permit violation, rather it is an indication that the permittee should focus on ways to improve pollutant reduction via the Storm Water Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs). Applicable benchmark values associated with the application parameters are included in Table 2 for informational purposes.

Table 2. Storm water screening

Parameter	Max Value (Form 2F, DMR data)	Screening Value*	Exceeds Screening Value?	Benchmark Value
Oil & Grease	<5 mg/L	NA	NA	NA
BOD_5	<3.0 mg/L	NA	NA	30 mg/L
COD	66.7 mg/L	NA	NA	120 mg/L
TSS	32.0 mg/L	NA	NA	100 mg/L
Total Nitrogen	3.76 mg/L	NA	NA	2.2 mg/L
Total Phosphorus	0.62 mg/L	NA	NA	2.0 mg/L
Copper, Total Recoverable	<20 µg/L	7.2 µg/L**	Undetermined	18 µg/L
pH (min, max)	6.61, 6.68 SU	3.7-8.0 SU	NO	6.0-9.0 SU
Chromium VI, Dissolved	<0.005 mg/L	32 µg/L **	NO	16 µg/L
Heptachlor	<0.10 µg/L	1.04 µg/L	NO	NA
Ammonia as NH3-N	0.08 mg/L	3.12 mg/L	NO	NA
Chlorides	10.7 mg/L	1720 mg/L	NO	NA
Total Residual Chlorine (TRC)	0.03 mg/L	38 µg/L	NO	NA
Iron, Total Recoverable	5.53 mg/L	NA	NA	1.0 mg/L
Cadmium, Dissolved	< 3.0 µg/L	1.64 µg/L**	Undetermined	2.1 µg/L

* Parameters with a screening value marked “NA” do not have an acute water quality standard on which to base the screening criteria. Parameters with a benchmark value marked NA do not have a benchmark value associated with them as defined in 9VAC25-151(General VPDES Permit for Storm Water Associated with Industrial Activity).

**The metals’ screening values are calculated based on the effluent hardness, reported as 25 mg/L $CaCO_3$ on the application, in accordance with 9VAC25-260-140.

See **Attachment E** for facility DMR data.

See **Attachment F** for all storm water data (Attachment A and EPA Form 2F).

Due to the quantification level used for copper and cadmium being greater than the respective screening values, DEQ was not able to determine whether these pollutants were present at concentrations above or below the screening value. For all other pollutants listed in Table 2, the maximum value reported was less than the applicable screening value. A storm water management evaluation is not required by the proposed 2012 permit, however due to the inconclusive storm water screening results for copper and cadmium, these parameters are required to be monitored quarterly rather than annually as is typical of storm water benchmark monitoring (see below for more detail).

Table 3. Basis for Effluent Limitations Outfall 002

PARAMETER	BASIS FOR LIMIT	DISCHARGE LIMITS			MONITORING REQUIREMENTS	
		MONTHLY AVG	MIN	MAX	SAMPLING FREQUENCY	SAMPLE TYPE
Flow (MG)	N/A	NA	NA	NL	1 per Year	Estimate
pH (SU)	1	NA	NL	NL	1 per Year	Grab
Total Suspended Solids (TSS) (mg/L)	1	NA	NA	NL	1 per Year	Grab
Turbidity (NTU)	1	NA	NA	NL	1 per Year	Grab
Hardness (as $CaCO_3$) (mg/L)	1	NA	NA	NL	1 per Quarter	Grab
Total Recoverable Copper (µg/L)	1, 2	NA	NA	NL	1 per Quarter	Grab
Total Recoverable Cadmium (µg/L)	1, 2	NA	NA	NL	1 per Quarter	Grab
Total Recoverable Iron (µg/L)	1	NA	NA	NL	1 per Year	Grab

"NA" means not applicable
"NL" means no limitation is established. Monitoring and reporting are required

1. 9VAC25-151 (General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity), Sector G- Metal Mining (Including SIC code 1099- misc. metal ores)
2. Best Professional Judgment

Part I.B of the 2012 permit identifies storm water management conditions. These conditions have been included based on current guidance (GM10-2003 VPDES Permit Manual, Section IN-4, as revised 8/25/11). The Storm Water Pollution Prevention Plan (SWPPP) required by Part I.B.2 of the permit is designed to reduce pollutants in storm water runoff and requires the use of Best Management Practices to control pollutants in storm water discharges from the facility. Part I.B.3 Sector Specific Storm Water Pollution Prevention Plan Requirements and Part I.B.4 Sector Specific Benchmark Monitoring are based on the applicable industrial storm water Sector G (metal mining) determined by the industry SIC code (SIC 1099- miscellaneous metal ores) and reflect storm water controls and benchmark monitoring tailored specifically to metal mining facilities (derived from 9VAC25-151-90). Although this facility is no longer an active mine, the sector and associated monitoring requirements are required for sites undergoing reclamation, as discussed in Section 9.

Per Sector G, benchmark monitoring shall be conducted on the following parameters: TSS, Turbidity, pH, hardness, antimony, arsenic, beryllium, cadmium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc. The VPDES permit manual (GM10-2003 as revised 8/25/11, Section IN-4) states that if data submitted by the permittee indicates conclusively that a parameter is not present in the storm water runoff above the benchmark value, benchmark monitoring of that parameter may be excluded from the permit. A review of the application data showed that antimony, arsenic, beryllium, lead, mercury, nickel, selenium, silver, and zinc all tested below the respective benchmark value, therefore benchmark monitoring of these parameters is not required by the 2012 permit.

pH: Annual benchmark monitoring of pH is required by the proposed 2012 permit. The benchmark value is 6.0 – 9.0 SU. The monitoring frequency is set at once per year as is standard for storm water only permits and in accordance with GM 10-2003, VPDES Permit Manual, Section IN-4, as revised 8/25/11.

TSS: Annual TSS benchmark monitoring is required by the proposed 2012 permit. The benchmark value is 100 mg/L. The monitoring frequency is set at once per year as is standard for storm water only permits and in accordance with GM 10-2003, VPDES Permit Manual, Section IN-4, as revised 8/25/11.

Turbidity: Annual benchmark monitoring of turbidity is required by the proposed 2012 permit with a benchmark value of 50 NTU. The monitoring frequency is set at once per year as is standard for storm

water only permits and in accordance with GM 10-2003, VPDES Permit Manual, Section IN-4, as revised 8/25/11.

Hardness: Hardness monitoring is necessary to acquire the metals' concentrations. Due to the quarterly total recoverable copper and cadmium benchmark monitoring requirement, hardness monitoring frequency is also set at quarterly in the proposed 2012 permit.

Total Recoverable Copper: Total recoverable copper was reported on the application at a concentration of < 20 µg/L. The screening value for copper is 7.2 µg/L and the benchmark value for copper is 18 µg/L. Due to the lab quantification level (QL) of 20 µg/L used for the total recoverable copper analysis, staff were not able to determine whether total recoverable copper is present in the storm water at concentrations lower than the screening value or the benchmark. Benchmark monitoring of this parameter is retained in the proposed 2012 permit as a best professional judgment due to the undetermined screening results and the presence of a numeric water quality based limit in the 2007 permit. The numerical limit is not carried forward into the 2012 permit as the outfall is no longer a process wastewater outfall. The monitoring frequency is set at quarterly as a best professional judgment due to the former permit limitation and toxicity concerns. Antibacksliding does not apply since material and significant changes have occurred at the site; the waste stream is now comprised of storm water only, as opposed to process wastewater. Refer to Item 17 for more details.

Total Recoverable Cadmium: Although cadmium (dissolved) was reported as < 3.0 µg/L, the screening value for this parameter is 1.64 µg/L and the benchmark concentration is 2.1 µg/L. Staff were not able to determine whether cadmium is present at concentrations lower than the respective screening and benchmark values. For this reason benchmark monitoring of cadmium is required by the proposed 2012 permit. Due to potential toxicity concerns, the monitoring frequency is set at a quarterly frequency as a best professional judgment.

Total Recoverable Iron: Benchmark monitoring of iron is required by the proposed 2012 permit. The benchmark value for iron is 1.0 mg/L. The monitoring frequency is set at once per year as is standard for storm water only permits and in accordance with GM 10-2003, VPDES Permit Manual, Section IN-4, as revised 8/25/11.

Iron (total recoverable) was reported on the application as present in the storm water at concentrations of 5.53 mg/L and 2.12 mg/L. The application data appears to decisively indicate that total recoverable iron is present in the storm water at concentrations greater than the applicable benchmark (1.0 mg/L). The permittee is encouraged to explore factors that may have contributed to the reported iron values and consider ways that the iron in the storm water exiting the site may be controlled via the SWPPP during the course of the permit term.

17. Antibacksliding Statement:
The 2007 permit contains a numeric total recoverable copper permit limit. The limit is not carried forward into the 2012 permit due to the fact that the outfall is no longer a process wastewater outfall. Antibacksliding does not apply because material and substantial changes to the facility have been made such that a less stringent limit is justified. When the 2007 permit was issued the site was an operational mine with process wastewater flowing to outfall 002. As of early 2009 all mining operations at the site had ceased, the concentrator equipment and treatment units were removed, and Iluka is now in the process of reclaiming the site. With the 2012 reissuance, storm water only flows to outfall 002 and there are no process wastewaters or material piles located on site. Due to the substantial change in the characteristics of the discharge via outfall 002, the copper limitation is removed from the permit. This approach in endorsed by Guidance Memorandum 96-001 which recommends that chemical-specific water quality-based limits not be placed on storm water outfalls at this time because the methodology for developing limits and the proper method of sampling is still a concern and under review/reevaluation by EPA.

Due to the lab QL of 20µg/L being greater than the screening value for copper, the results of the storm water screening were undetermined. Quarterly benchmark monitoring of total recoverable copper is therefore required by the proposed 2012 permit as a best professional judgment. Refer to the copper discussion in Section 16 for more detail.

Outfall 001 has been removed from the permit due to the cessation of the discharge. Antibacksliding does not apply to Outfall 001 because the discharge has been eliminated.

18. Compliance Schedules: None

19. Special Conditions:

Part I.B. **Storm Water Management Conditions**
Rationale: VPDES Permit Regulation, 9 VAC 25-31-10 defines discharges of storm water from industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. The Storm Water Pollution Prevention Plan requirements of the permit are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq. VPDES Permit Regulation, 9 VAC 25-31-220 K, requires use of best management practices where applicable to control or abate the discharge of pollutants when numeric effluent limits are infeasible or the practices are necessary to achieve effluent limit or to carry out the purpose and intent of the Clean Water Act and State Water Control Law.

Part I.B.3 sector specific SWPP requirements and Part I.B.4 sector specific benchmark monitoring are derived from Sector G, Metal Mining. Sector G is applicable to facilities with SIC code 1099, and applies to storm water dischargers from facilities at mining sites undergoing reclamation.

Part I.C.1. **Operation and Maintenance (O & M) Manual Requirement**
Rationale: Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approved O & M manual ensures this.

Part I.C.2. **Materials Handling and Storage**
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

Part I.C.3. **Water Quality Criteria Reopener**
Rationale: VPDES Permit Regulation, 9VAC25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of the water quality standards.

Part I.C.4. **Compliance Reporting**
Rationale: Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

Part I.C.5. **Groundwater Monitoring Plan**
Rationale: State Water Control Law § 62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. Groundwater monitoring for parameters of concern will indicate whether possible lagoon seepage is resulting in violations of the State Water Control Board's Groundwater Standards.

There is considerable history involved with groundwater monitoring at this site. The 2012 permit requires quarterly monitoring in accordance with the groundwater monitoring plan approved on April 6, 2007 and the addendum to the groundwater monitoring plan (Request to Relocate Well HMW-A) submitted on July 20, 2011 and approved on October 18, 2011. Refer to **Attachment G** for the groundwater discussion and historical documentation.

Iluka is reclaiming the site under a conditionally approved closure plan that precludes termination of groundwater monitoring without DEQ approval. This permit shall remain active and groundwater monitoring shall continue following complete site reclamation until such time as DEQ determines that the groundwater at downgradient monitoring wells is no longer

contaminated and the site is in conformance with 9VAC25-280-10 et seq Groundwater Standards.

Part I.C.6. **Total Maximum Daily Load (TMDL) Reopener**
Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed it they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

Part I.C.7. **Facility Closure Plan**
Rationale: §62.1-44.16 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if treatment facilities are being replaced or are expected to close.

The permittee is presently in the midst of executing the conditionally approved closure plan (12/18/2008) for this facility. Refer to **Attachment H** for a copy of the closure plan.

Part I.C.8. **Concept Engineering Report (CER)**
Rationale: §62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A CER means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations.

Part II **Conditions Applicable to All Permits**
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

20. NPDES Permit Rating Work Sheet: Total Score 0
See **Attachment I**: NPDES Permit Rating Worksheet

Rating is zero due to the lack of process wastewater discharges from this site.

21. Changes to Permit:

Changes to Cover Page: boilerplate language update (GM 10-2003 VPDES Permit Manual, Section IN-1, as revised 8/25/11), signatory update (Agency Policy Statement No. 2-09 “Delegations of Authority,” 10/31/2008) and stream class designation updated per 9VAC 25-260. Expression of stream name updated in accordance with 4/26/2011 DEQ Piedmont Regional Office staff decisions. Effective date updated and expiration date truncated from a 5-year expiration date to October 31, 2017, in order for the next permit term to start with a complete calendar month.

Outfall 001 (former Part I.A.1) has been removed from the permit in its entirety due to the decommissioning of the mine and the removal of the treatment units.

Table 4. Changes to Part I.A.1 (former Part I.A.2) Limitations and Monitoring Requirements Outfall 002

Parameter (2012 permit):	**Monitoring Limitation/Frequency**		**Rationale:**
	From (2007):	To (2012):	
Part I.A.1- Outfall 002	Part I.A.2	Part I.A.1	Outfall 001 (former Part I.A.1 in 2006 permit) deleted due to removal of the treatment units.
Flow (MG)	NL 1/Quarter	NL 1 per Year	Units changed to MG and monitoring frequency reduced to 1per year due to the discharge being purely storm water from the reclamation site. There is no contact with material piles; all material piles have been removed from the site.
TSS (mg/L)	30/60 mg/L 1/Quarter	NL 1per Year	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4. Benchmark monitoring only is required in storm water permits.
Turbidity (NTU)	[NEW]	NL 1 per Year	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4, Sector G- Metal Mining (SIC code 1099)
pH (SU)	6.0-9.0 SU 1/Quarter	NL 1 per Year	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4, Sector G- Metal Mining (SIC code 1099)
Hardness (as $CaCO_3$) (mg/L)	[NEW]	NL 1 per Quarter	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4, Sector G- Metal Mining (SIC code 1099)
Total Recoverable Copper (µg/L)	3.6 µg/L 1/6 Months	NL 1 per Quarter	Numeric limitation removed due to fundamental changes at the facility. The outfall is now purely storm water and there are no material piles on site. Monitoring frequency is set at 1 per quarter as a best professional judgment.
Total Recoverable Cadmium (µg/L)	[NEW]	NL 1 per Quarter	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4, Sector G- Metal Mining (SIC code 1099). Monitoring frequency is set at 1 per quarter as a best professional judgment.
Total Recoverable Iron (µg/L)	[NEW]	NL 1/Year	VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4, Sector G- Metal Mining (SIC code 1099)

Table 4. (Continued)

Footnotes from (2007):	**To (2012):**	**Rationale:**
Part I.A.2.a	Part I.A.1	Footnote a. incorporated into Part I.A.1.
Part I.A.2.b	Part I.A.2	Reformatted, no change in text.
Part I.A.2.c	Part I.A.5	Citation updated and reformatted.
[NEW]	Part I.A.1.a	Added for clarity to define annual monitoring period.
[NEW]	Part I.A.1.b	Added to identify benchmark monitoring concentrations.
[NEW]	Part I.A.1.c	Added to define once per quarter monitoring period.
[NEW]	Part I.A.1.d	Defines the sample type for storm water flow.
[NEW]	Part I.A.3	Added per VPDES Permit Manual, GM10-2003, as revised 8/25/11, Industrial storm water section IN-4.
[NEW]	Part I.A.4	Added for clarity to identify further storm water requirements.
NA = NL =	NA means not applicable NL means no limitation is established. Monitoring and reporting are required.	Definitions spelled out and clarified.
Part I.A.2.a(1) Part I.A.2.a(2)	Deleted	Significant digits and schedule of compliance footnotes are no longer needed or applicable.

NL means “no limit”
NA means “not applicable”

Table 5. Changes to Special Conditions (Part I)

From (2007):	To (2012):	Change/Rationale:
Part I.B.1 O&M Manual	Part I.C.1 O&M Manual	Language update per the 4/3/12 O& M language edition distributed by Central Office
Part I.B.2 TMDL Reopener	Part I.C.6 TMDL Reopener	Relabeled
Part I.B.3 Notification Levels	[Deleted]	Removed due to decommissioning of mine and conversion to solely storm water
Part I.B.4 Materials Handling/Storage	Part I.C.2 Materials handling and Storage	Language update per the VPDES Permit Manual, GM10-2003, as revised 8/25/11, Section IN-1
Part I.B.5 Compliance Reporting	Part I.C.4 Compliance Reporting	Language update per the VPDES Permit Manual GM10-2003, as revised 8/25/11, Section IN-1and edited to apply to the 2012 storm water permit
Part I.B.6 Facility Closure Plan	Part I.C.7 Facility Closure Plan	Language update per the VPDES Permit Manual GM10-2003, as revised 8/25/11
Part I.B.7 Ground water monitoring plan	Part I.C.5 Groundwater Monitoring Plan	Revised to remove the CAP requirement (permittee is presently performing additional monitoring to satisfy the CAP requirement) and update the language to conform with the current groundwater monitoring status (addendum to plan approved on 10/18/11)
Part I.B.8 Water Quality Criteria Monitoring	[Deleted]	Water quality criteria monitoring data was submitted with the application
[NEW]	Part I.C.3 Water Quality Criteria Reopener	Added to permit due to monitoring only parameters in accordance with the VPDES Permit Manual, GM10-2003, as revised 8/25/11, Section IN-1
Part I.C. WET Testing	[Deleted]	Removed due to cessation of process wastewater discharge and facility operations at the site and removal of Outfall 001
Part I.D.1 Compliance schedule for total recoverable copper	[Deleted]	Process wastewater discharges no longer occur on site and limitation has been removed. Benchmark monitoring of total recoverable copper is required on Outfall 002, Part I.A.1 of the 2012 permit as a best professional judgment due to the undetermined results of the screening evaluation. Refer to Section 16 for further details.
[NEW]	Part I.B Storm water management conditions	Added per the VPDES permit manual (8/25/11) Industrial storm water section IN-4, Sector G- Metal Mining (applicable to SIC code 1099) due to the conversion of Outfall 002 to a solely storm water outfall. No process wastewaters are generated on site

Changes to Part II:
Part II.A.4 added to address the Virginia Environmental Laboratory Accreditation Program (VELAP) requirements. The addition was made in accordance with the VPDES Permit Manual, GM10-2003, as revised 8/25/2011.

22. Variances/Alternate Limits or Conditions: None

23. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: Publishing Newspaper: *The Dinwiddie Monitor*
Publishing Dates: August 8, 2012 and August 15, 2012
Start Date: August 8, 2012
End Date: September 7, 2012

All pertinent information is on file and may be inspected or copied by contacting Janine Howard at:

Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
t: (804) 527-5046
f: (804) 527-5106
janine.howard@deq.virginia.gov

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ office named above by appointment or may request copies of the documents from the contact person listed above.

Public Comments Received: No public comments were received during the comment period and the draft permit has not changed as a result of the comment period.

DEQ did receive a call from a citizen of Sutherland, Virginia who requested a copy of the permit package. The permit package was mailed via USPS in early August and DEQ received no further questions regarding the permit package.

24. Additional Comments:

Planning Statement: The discharge is not addressed in any planning document but will be included when the plan is updated (J. Palmore, 4/5/12).

Previous Board Action: None

Virginia Department of Health (VDH) review:
By letter dated 12/21/2011 VDH stated that the raw water intake for the City of Norfolk waterworks is located approximately 69 miles downstream of the discharge. VDH stated that this should be sufficient distance to minimize the impacts of the discharge. VDH did not object to the permit and did not request an opportunity to review the draft permit.

Nutrient Requirements
The facility is not required to register for coverage under 9 VAC 25-820-10 et seq.- General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia. The facility does not discharge into the Chesapeake Bay Watershed and is not listed in the Chesapeake Bay TMDL.

Staff Comments:

a. The monitoring frequency of flow, TSS, and pH has been reduced in the proposed 2012 permit from one per quarter to once per year. This change was made due to the modified nature of the discharge via Outfall 002. Outfall 002 was classed as a process wastewater outfall in the 2007 permit due to the active mining and material storage on the site at the time. With the 2012 reissuance all mining activity has ceased and no materials are stored on site. Outfall 002 is now a storm water only outfall and the monitoring frequency has been set at once per year for all

parameters (with the exception of total recoverable copper, cadmium, and hardness) in accordance with GM10-2003 VPDES Permit Manual Section IN-4 Industrial Storm water discharges, as revised 8/25/11. Refer to Item 16 for a discussion on the quarterly monitoring frequency assigned to total recoverable copper, cadmium, and hardness.

b. This facility is not subject to the VPDES Industrial Storm Water General permit (VAR05) authorized by 9 VAC 25-151. Industrial storm water is accounted for in the individual permit (Outfall 002).

d. This permittee is not a member of the Virginia Environmental Excellence Program (VEEP).

e. The discharge is not controversial and is currently meeting the required effluent limitations.

f. The permittee has been an e-DMR participant as of 4/5/2010.

g. The 2011 permit fees have been paid as of 9/12/2011.

h. EPA has waived the right to comment and/or object to the adequacy of the draft permit.

i. In accordance with §62.1-44.15:01.A.2 , 9VAC25-31-290.G.2 and GM11-005, a copy of the public notice for this permit was mailed to the Crater Regional Planning District Commission, the County Administrator, and the Chairman of the Board of Supervisors on July 30, 2012.

j. The expiration date of this permit reissuance is October 31, 2017. The permit duration has been truncated from a full 5 years so as to allow for a smooth transition into a complete monthly monitoring period upon permit reissuance.

25. 303(d) Listed Segments (TMDL): The discharge is not addressed in a current TMDL.

26. Fact Sheet Attachments:

Attachment A. Flow Frequency Memorandum
Attachment B. Site Diagram
Attachment C. Topographic Map (USGS Cherry Hill Quadrangle 40D)
Attachment D. Site Inspection Report
Attachment E. Discharge Monitoring Report (DMR) data
Attachment F. Application data (Form 2F and Attachment A Water Quality Criteria Monitoring)
Attachment G. Groundwater Discussion and Historical Documentation, including the Groundwater Monitoring Plan (approved 4/6/2007)
Attachment H. Facility Closure Plan (conditionally approved 12/19/2008)
Attachment I. NPDES Permit Rating Worksheet